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New Technique Promises Better CHICKEN BLEEDING

by A. W. KOTULA, E. E. DREWNIAK, and L. L. DAVIS

RECENT tests conducted by the Agricultural Marketing Service on the gassing of chickens with carbon dioxide before slaughter indicate this method can cause faster and more complete bleeding.

In controlled experiments with 95 meat-type chickens of both sexes, researchers found that gassed birds lost much more blood in the initial 30-second period than those slaughtered without gassing.

Proper and thorough bleeding of chickens is essential to achieve and maintain high quality in poultry meat.

With poultry processing standards coming in for closer scrutiny, processors are looking for ways of improving procedures and achieving better quality.

Many processors believe that the improvement of the meat-type birds, through breeding and high carbohydrate-low protein feeding, has resulted in slower and less complete bleeding at time of slaughter. This, coupled with accelerated processing procedures, has led to more and more birds being poorly or improperly bled.

To remedy this situation, research with the use of carbon dioxide has centered on its effect on the rate of bleeding and the volume of blood drained after slaughter.

The AMS experiments showed that, in the initial 30-second period after sticking, gassed birds bled more freely than those not treated with carbon dioxide. After 3 minutes, the amount of bleeding in proportion to body weight still was greater for the gassed birds, but not significantly so.

Sex of the birds seemed to have little or no direct bearing on bleeding. The tests did indicate, though, that heavy chickens lose a smaller percentage of body weight through bleeding than lighter weight birds.

During the experiments, researchers gassed the birds in a specially constructed wooden box 30 inches long, 30 inches wide, and 24 inches high, equipped with a glass window in the top. A small electric fan within the box circulated the gas mixture to insure a uniform concentration of carbon dioxide throughout the interior.

A CO_2 concentration of 33 to 36 percent was maintained in the box by supplying the gas through a small rubber hose. Each chicken was removed after 75 seconds of exposure.

Previous tests had shown that birds treated with carbon dioxide at concentrations above 40 percent for more than 50 seconds frequently went into convulsions, flapping their wings and kicking their legs violently. Concentrations above 60 percent for more than 20 seconds usually resulted in death. Exposure to CO_2 at concentrations below 20 percent for less than 75 seconds failed to immobilize the birds, and, unless exceptionally long exposure times were used, the birds recovered quickly.

With the 33 to 36 percent concentration at 75 seconds exposure, the birds were completely immobilized without any detrimental effects. For purposes of the experiment, workers then kept the time interval between removing the birds from the gas chamber and slaughter at a constant of 21 seconds.

On the basis of results obtained in these experiments, quality experts of the Agricultural Marketing Service believe that carbon dioxide gassing may prove to be a practical and inexpensive means of insuring quick and more complete bleeding of poultry.

At the time of this research, the authors were food technologists in the Quality Maintenance and Improvement Section of AMS, Beltsville, Md. Mr. Drewniak and Mr. Davis have since resigned.

TURKEY GROWERS LIKE SELLING ON GRADE-AND-YIELD BASIS

by EARL H. RINEAR

IT MAY take the fun out of selling, but it usually puts more money in a turkey grower's pocket if he sells his birds on a grade-and-yield basis rather than for a flock-run average price.

That's what 27 out of 32 Minnesota and Wisconsin turkey farmers reported when surveyed by the Agricultural Marketing Service. Only 3 said they prefer to sell on a flock-run average price basis; 2 other growers could not decide which method is better.

Net gains reported by 12 of the growers varied from small fractions of a cent up to 1.7 cents a pound in favor of selling on a grade-and-yield basis. However, one grower said he sold on a flock-run basis and got a better price than he had been offered on a grade-and-yield basis. The other 19 growers failed to supply information regarding net gains or losses between the two methods of selling their turkeys.

Many of the growers (15 out of the 27 who favor the grade-and-yield basis) feel it is the only fair way of selling. There is no averaging of prices paid for good and poor flocks, and each individual grower gets an exact reading on what his birds are worth.

Also, 12 of these growers said that since they had been selling on a grade-and-yield basis, they had increased the number of Grade A birds in their flocks. One grower reported that he would never have known of the skin blisters on his birds if he had sold them on a flock-run live price basis. However, a processor's statement listed this as the cause of downgrading.

Another grower remarked that he is now giving his birds more space on the farm because this has improved the average grade rating of his flocks.

Some of these growers have been selling on a grade-and-yield basis for as long as 10 years.

Almost all who sell by grade and yield like this method of doing business. Six of the growers surveyed were so well satisfied that they felt they couldn't afford to spend their time talking to live buyers. In fact, 11 commented that few live buyers seemed to be coming around any more.

Although several producers said they missed the fun of bargaining with live buyers, most of those who dealt on a grade-yield basis felt that they received a fairer price this way.

They objected to the common practice of live buyers "paying the same price for good and bad flocks."

The five growers who did not sell on a grade-yield basis or who had no preference, made similar comments. Two of the three who definitely preferred flock-run sales said that too many of their birds were downgraded; the other said too many birds in his flock were condemned.

All five seemed apprehensive of the processor's reliability. The two growers who were undecided about which method of selling was best objected because "you have to take the processor's word for the grade and yield" and "the grower assumes all the risk."

One of these men admitted, though, that he had never figured his net gain or loss between the two methods of selling his turkeys. Processors further report that condemned birds are the growers loss whether or not the turkeys are purchased on a flock-run or a grade-and-yield basis.

AMS researchers are continuing their study of buying turkeys in a sample of processing plants to determine the comparative accuracy of the two methods, and to evaluate other advantages and disadvantages to growers and processors.

Mr. Rinear is an agricultural economist in the Market Organization and Costs Branch, AMS.

LIVESTOCK MARKETS ARE ON THE MOVE

The shift from selling livestock at terminal outlets has been going on since World War I. Today, many livestock producers do business practically over their back fence.

by VICTOR B. PHILLIPS and GERALD ENGELMAN

THE LIVESTOCK producer is depending more and more on outlets that are right in his own backyard.

According to a recent study of livestock market outlets made by Agricultural Marketing Service, country outlets, which do business practically over the back fence of the producers, have been gaining in sales over the past 30 years.

Country outlets include sales direct to packers, to local dealers, and to other farmers. By 1955, such outlets had a slight edge over terminal markets in number of sales. Using the marketing equivalent of 1 head of cattle to equal 3 calves, 4 hogs, or 10 sheep, over 23,000,000 head of livestock were sold through country outlets in 1955; terminal outlets handled about 21,000,000.

Auction sales, the other big market place for livestock, handled about 16,000,000 head. And auctions, too, are generally located near the producers they service.

Country outlets—local markets, local dealers, and buyers in all parts of the country—number in the tens of thousands today. Some packers buy hogs directly from the farm. Cattle are often bought by packers who travel the country from feedlot to feedlot, making their bids as they inspect the cattle. The local dealer is another important part of this group of buyers.

But, the pattern of sales through different types of outlets varies from one part of the country to another and according to the species of livestock sold.

For livestock as a whole, public terminal markets lead the field in the North Central States. In the South, auctions are on top, and in the Northeast and West, country selling is the big outlet for livestock.

The shift from mass selling of livestock at a few terminal outlets has been going on since shortly after World War I. In 1923 Federally inspected slaughterers bought 90 percent of their cattle in the big central plants; in 1956 this share was down to 70 percent. Receipts have been declining for other animals, too. The central markets used to handle about 86 percent of the sheep and lambs. The percentage for sheep and lambs in 1956 was down to 45 percent. In the same period, hogs dropped from 77 percent to 37 percent.

The biggest drop for the central markets was in the calf market; the terminal share fell from 86 percent in 1923 to 37 percent in 1956.

Marketing researchers add that when the figures are expanded to include all commercial slaughter houses—instead of just the plants that slaughter under Federal inspection—the share for the terminal markets is somewhat smaller.

Today there are some 64 central markets with 10 of them collecting between one-half and three-fourths of receipts taken at terminal outlets.

After 1930, markets located in the range country gained at the expense of those located in the Corn Belt. It's all part of the same trend that has given such a boost to auctions and country outlets.

As the market researchers point out, the more "backyard" outlets for livestock, the more market possibilities for producers.

In choosing his outlet, however, the producer should consider the service offered by the various outlets, selling costs, what the competition looks like, and, ultimately, his net return. Since the market picture changes constantly, he will have to weigh all the facts to determine the best deal for his stock at any given time.

Victor B. Phillips is an agricultural economist in the Livestock Section, Market Organization and Costs Branch, AMS. Gerald Engelman is Head of this section.

WHOLESALER FIELDMEN HELP FOOD RETAILERS

by MARTIN KRIESBERG and MARTIN LEIMAN

Wholesaler fieldmen give retailers advice on how to operate their stores more efficiently, merchandise more effectively, and in general move more goods at a lower cost.

INCREASING numbers of salesmen who call on retail food stores for grocery wholesalers are taking on new jobs.

They are no longer primarily concerned with getting grocery orders from the retailers nor, in fact, are they any longer being called salesmen. They are now known as fieldmen or field representatives, and their job is to help retailers operate their stores more efficiently, merchandise more effectively, and in general move more goods at a lower cost.

This represents an enlightened approach to wholesaler-retailer relations and is characterized by a growing spirit of cooperation.

Key elements of the new teamwork between grocery wholesalers and affiliated retailers as developed in a recent research study by the Agricultural Marketing Service are:

1. Closer cooperation between wholesaler and retailer is being achieved by wholesalers who are assuming a more exacting leadership in working with affiliated retailers.

2. Recognizing that small accounts cannot be serviced efficiently, wholesalers are concentrating their efforts on making good accounts better. Many wholesalers are helping their independent retailers achieve supermarket or superette status and to manage these operations effectively.

3. The fieldmen of grocery wholesalers are becoming skilled store technicians and their function is being focused on helping the retailer become a more effective merchandiser and more efficient operator.

After studying the operations of a number of wholesale grocers who sponsor voluntary retailer groups, AMS wholesale-retail experts have recommended ways to increase the effectiveness of fieldmen.

In planning field operations and the function of wholesaler fieldmen, wholesaler management needs to formulate the basic objectives of the firm and the policies to be pursued.

Plans for the field operation should start with a careful statement of the role of the fieldman in achieving the firm's objectives and a detailed job description. These become the basis for recruitment and selection of the men to fill the jobs. They also help in setting salary levels and possible systems of incentives.

The new field function calls for systematic supervision of fieldman activities. This starts with telling fieldmen what their duties are, why these jobs need to be done, and guidance in the performance of these tasks. Systematic supervision includes planned two-way communication, definite procedures for evaluating fieldman performance, and plans for developing fieldman abilities.

A regular report form can be designed to help management know what the fieldmen do at retail stops, and, at the same time, remind the fieldmen that management is evaluating their performance.

Weekly merchandising meetings, now widely used among the firms studied, are a good means of communicating company policies and programs to fieldmen.

Effective evaluation of fieldman performance must include definite criteria for the evaluation, and a means for making these criteria and the system known to fieldmen. When such an evaluation system is understood and accepted, it can function effectively as a guide and be an incentive to better performance.

Work practices of fieldmen can be improved by special training in retail store management. Fieldmen should not only be acquainted with the operations of the various departments of the stores, but also with the fundamentals of store management. They should be trained in accounting practices and analysis of operating statistics, principles of work simplification, and personnel management.

If the field program of the voluntary group is to be effective, retailers should feel that it is their program. One of the best ways to build and maintain this attitude is to secure greater participation of retailers in the planning stages. Advisory committees of cooperating retailers can be effective in this respect.

Closer cooperation between wholesalers and retailers and more effective use of fieldmen can bring about increased operating efficiencies at both wholesale and retail levels.

The authors are specialists in marketing management, Marketing Research Division, AMS

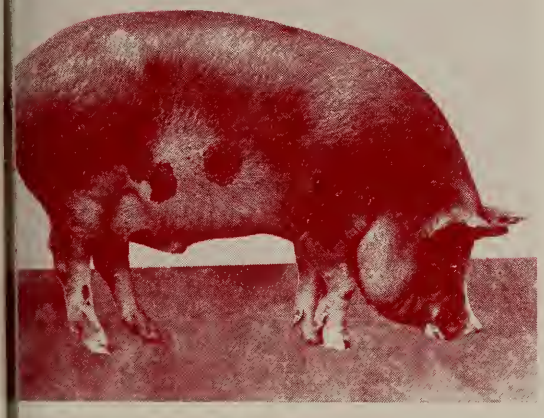
U. S. No. 1 HOGS

"BRING HOME THE BACON"

by C. LOWELL STRONG

U. S. NO. 1

U. S. NO. 2



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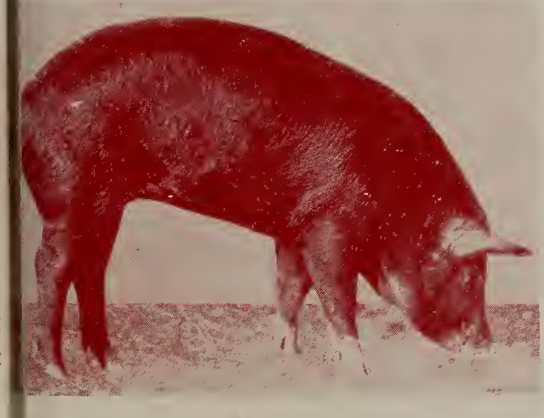

MEDIUM

TODAY it's the streamlined hog, grading U.S. No. 1, that "brings home the bacon." At least that's true at many markets where buying is on the basis of U.S. grades.

U.S. grades for hogs reflect the consumer preference for lean meat; hence the trend toward buying on the basis of grade.

Time was when the fatter the hog, the more money he brought. But the declining use of pork pointed up the food shopper's aversion to buying fat pork.

As early as 1949, the trend toward lean meat brought about a proposal to revise U.S. hog grades in accordance with that preference. In 1952 the present grades for slaughter hogs were adopted.

A U.S. No. 1 hog has just about the minimum degree of finish required to produce high quality pork. Slaughter hogs which are slightly overfinished grade U.S. No. 2, and those which are decidedly overfat grade U.S. No. 3.

These three grades all have enough finish to produce pork of acceptable quality, but the proportion of lean decreases in the No. 2 and No. 3 grades. On the other hand, hogs which are slighlty underfinished grade Medium. While such hogs may have a high proportion of lean meat, their underfinish results in a lower quality pork.

Standards of these grades are developed by the Livestock Division of AMS, which provides the standards for cattle and sheep as well. These latter standards are widely used in livestock trading.

Interest in standards for slaughter hogs has been increasing in recent years, but their use has been limited by the traditional method of marketing hogs primarily on a weight basis.

This system, obviously, had the effect of penalizing the careful producer who raised meaty hogs and of paying the producer of overfat hogs more than his product was worth.

Until the last several years when the trend toward marketing hogs according to grade began to take hold, there was little incentive for the farmer to make an effort to produce hogs which would grade U.S. No. 1.

But the picture looks different today where buying by grade is being practiced. In these markets, U.S. No. 1 hogs have been bringing from 25 to 75 cents more per hundredweight than U.S. No. 2 hogs; U.S. No. 2's have been bringing up to 50 cents more than No. 3's.

Packers in the past have expressed some fear of the reaction of farmers who would have to accept less money for an overfat hog if it were sold on a grade basis than they would have received if it had been sold on the basis of weight alone.

The experience of packers who have been buying on grade, however, has been an increase in their total supply as well as an increase in their supply of better quality hogs. Farmers who take the trouble to raise a more valuable product are naturally seeking out the market which will pay what it is worth.

In past years, such producers have had difficulty in finding a market which would pay higher prices for leaner hogs. Livestock specialists feel that the day is coming when it is the producer of fat hogs who will have difficulty in finding a market.

C. Lowell Strong is a marketing specialist in the Standardization Branch, Livestock Division, AMS.

Displaying Fresh Produce in Re

"In loading or unloading operations, handle materials in unit loads whenever possible and in the largest unit container practicable."

This principle is pretty generally accepted by materials handling experts, but it isn't always put into practice by industry. When it is, it requires new bulk handling equipment as well as new work methods. This is particularly true when applied to retailing fresh produce.

Now, however, specialists of the Market Research Division of the Agricultural Marketing Service have come up with a practical solution to both these needs. The new equipment is a combination of large tray-type handling units that can be filled with produce in the back room, hauled on a carrier rack to the floor, and then placed directly on the produce counter. The new work methods simply involve more efficient operating procedures for filling the trays in the backroom and in stocking the display counters.

For the retail grocer with a bulk produce department, the improved equipment and work procedures offer many merchandising and quality control advantages. They also increase labor productivity.

James S. Toothman is a marketing specialist in the Philadelphia field office of the Wholesaling and Retailing Section, AMS.

For example, one retailer who adopted this system to move merchandise from storage areas to display counters improved his labor productivity almost 50 percent. He also found that the display of merchandise in unit containers kept his fresh produce moving more easily. It forced the rotation of counter stock each time new merchandise was added.

All culling, grading, and pricing work was done in the backroom work area. This allowed advance traying of merchandise and faster stocking of the counters. It also kept aisles free of packing cases filled with trimming litter.

Preliminary results from a second test store show that the greater the volume of produce, the greater the savings that may be realized. In a large supermarket, jobs are more specialized and there is a greater opportunity for handling efficiency.

With the tray display system, the retailer is able to achieve some of the same operational advantages associated with the prepack type of operation without actually packaging the merchandise.

In both test stores, the installation of the tray display system was preceded by the installation of an improved operating procedure. Efficient backroom work methods must support the display function. They a necessary preliminary to the insta tion of the tray display system.

Of course, the key to the wh procedure is the newly devised c with their preassembled trays of t med and graded produce. He where the real efficiency lies—in t movement of ready-to-sell prod

Loaded in the backroom either previous night or just before the s opens in the morning, the trays produce move to the display area specially designed carrier racks. many as 18 trays—each contai from two-thirds to a full ship container of merchandise—can hauled in a single trip to the f

In the AMS experiment, trays taining refrigerated produce placed directly on the icebed rack. Dry counters, however, ha be modified to accommodate the trays. This was done rather easily inserting plywood steps over counter surface.

In stocking the counter, a new of fresh produce is simply ins in place of the old tray. Thus, bulk tray system, by its very na provides another merchandising vantage—it enforces continuous tion of counter stock.

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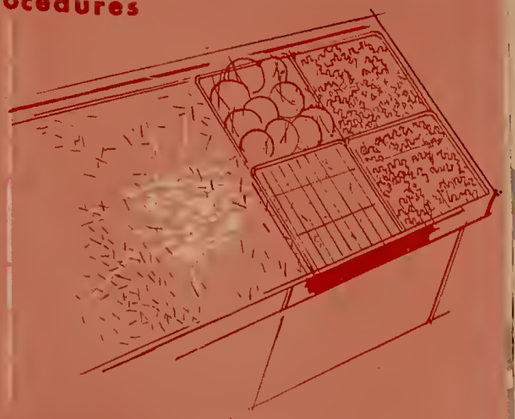

Displaying Fresh Produce in Retail Stores

by JAMES S. TOOTHMAN

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Usually two trays in tandem ... used for displaying produce ... rather than a single tray large enough to cover the full depth of the counter. Researchers found the loaded half-depth tray could be handled easily by display workers. Also, the division of a display into two trays speeds up the restocking operation since fewer pieces need to be handled.

Three types of trays were tested. The type varied with the different items, depending on the characteristics of the item and whether it was refrigerated on the display counter. However, using more than one size tray only complicated handling and display space planning.

Flexibility in the size of counter displays and in the variety of items may be achieved by other methods. One is "checkerboarding," that is, placing different items in front and rear trays.. Or, a retailer can vary his display by placing trays of small-volume and impulse items on shelf extenders or by using several tray widths for large-volume and featured items. Also, half-size trays are being tried for displaying small-volume items that require infrequent restocking.

But before the equipment and knowhow for the new bulk handling operation can bring real results, there must be advance preparation in planning and directing. The new system offers a decided contrast to the hour-by-hour or crisis approach which is so typical of many retail bulk produce operations. With the new tray system, managerial personnel must be trained in a completely new approach to retailing fresh produce. This training must run concurrently with the installation of the equipment.

Although the importance of the managerial function increases with the tray system, supervisory direction and instruction become simpler once the new operation gets under way. This is because the worker performs most tasks at a fixed workplace rather than at various locations on the selling floor. Also the amount of training required for subordinate workers may even be less than in a conventional bulk operation.

In fact, the test installation showed the tray operation offered many distinct advantages over conventional bulk produce retailing methods. Briefly, these are:

Higher Labor Productivity:

- Ability to prepare merchandise and build displays in advance.
- More even distribution of the work load through the hours the store is open and among all department employees.
- Reduced time to perform display operations.
- Simplified counter space allocation.
- Increased flexibility in employee scheduling and in the use of part-time workers.

Better Merchandising:

- Faster counter restocking during peak sales periods.
- Easier and faster morning setup of merchandise displays.
- Elimination of shipping container and packing material handling on the selling floor.
- Less congestion in aisles caused by employees and equipment.

Better Quality Control:

- Automatic and simplified rotation of counter stock each time new merchandise is added.
- Reduction of bruise damage caused by rough or multiple handling of individual pieces.

To date, the AMS experiment has been limited to bulk produce departments. However, experience shows that the tray display system is equally adaptable to packaged fresh produce. Several supplier-packaged items stocked by the test store were readily handled in the trays.

The study is now being extended to include adaptation of the system for full prepack departments and measurement of its use in this type operation.

by JOSEPH D. BRESLIN

Color of hay is measured on 'colorimeter' at laboratory of the AMS Grain Division.

Hay inspectors check samples for color, amount of leaf, maturity, and the amount of foreign material when they're

GRADING HAY FOR QUALITY

MAKE HAY while the sun shines—then sell that hay on the basis of U.S. grades and you can improve your market position. U.S. hay grades actually reflect the feeding value of hay—so a top grade hay should certainly bring the top market price.

The Grain Division of USDA's Agricultural Marketing Service provides standards for hay, which are used as the basis for determining grade, and supervises a staff of 114 inspectors who apply the grades.

These inspectors, who are either Federal employees or are Federally licensed, are thoroughly trained and are able to determine the grades of all the various kinds of hay (11 classes are graded) with a remarkable degree of accuracy.

Just to make sure that their work is accurate, they from time to time send "supervision samples" to the Grain Division's Washington laboratory. Here a "colorimeter" is used to measure the hay's color, and a botanical analysis is run to determine exact percentages of leaf, foreign material, and mixture of other kinds of hay in the hay sample.

Color, amount of leaf, maturity, and amount of foreign material are all factors used in determining hay grades. Their relation to the feeding value of hay has been determined by chemical analysis and by feeding tests, and these factors have formed the basis for hay standards since they were first issued back in 1923.

The tests, conducted by the U.S. Department of Agriculture, showed among other things that the amount of green color in the hay is directly proportionate to its protein value. They also pointed up the fact that about 70 percent of the feeding value in a legume hay is in the leaf.

U.S. grades for hay are U.S. No. 1, No. 2, No. 3, and Sample grade. Any hay which does not meet requirements for one of the grades cannot be classified as hay.

Specifications for the four grades vary according to the type of hay being graded. Alfalfa hay, for instance, to grade U.S. No. 1 must have a minimum of 40 percent leaf, must have 60 percent green color, and may not contain more than 5 percent foreign material. U.S. No. 1 timothy hay must meet a 40 percent green color requirement and contain not more than 10 percent foreign material.

To determine the grade of a lot of hay, any buyer or seller may call for an inspection. Inspection offices are generally located at shipping points or at terminal markets. The applicant is required to pay a fee for the service, based on the tonnage graded, and there is a minimum fee for small lots.

Detailed information on hay grades is contained in the "Handbook of Official Hay and Straw Standards." Single copies may be obtained free from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Joseph D. Breslin is a hay inspector in the Grain Division of AMS.

AT LEFT, A HAY SAMPLE IS RUN THROUGH A SEPARATOR; AT RIGHT, LAB TECHNICIAN SEPARATES COMPONENTS OF A SAMPLE.

THE PLACE AND PURPOSE OF

SCHOOL FOOD SERVICES

Chief State school officers and State school lunch directors met in Washington, D.C., in August for a National School Lunch Conference. A highlight of that meeting was a speech by E. Allen Bateman, Superintendent of Public Instruction in Utah, on the place and purpose of school food services in the total educational program in elementary and secondary schools. A brief summary of Mr. Bateman's talk follows.

THE TIME has arrived when the main purpose of food service programs should shift from that of being a gastronomical filling station to that of being an important educational experience.

The school lunch service should be a developmental experience in the education of children. To accomplish this goal, educators should have several objectives in mind for the school lunch program.

We should provide nutritionally balanced, attractive and well cooked meals, served in a pleasant and socially attractive environment.

The school should have adequate physical facilities to permit the preparation and serving of meals under reasonably satisfactory conditions. The lunchroom should be of sufficient size to permit meals to be served and eaten without undue crowding or haste.

The school should improve the health of school children by serving nutritionally balanced meals, by developing in children habits of eating a variety of foods, and by making meals available to children who may not be able to pay the usual price charged.

There should be an organized program to use the school lunch as a curricular and developmental experience for children.

The administrative and policy procedures which will be desirable to achieve the educational objective of the school lunch program, however, need to be recognized.

All schools should provide school food services. Although there will occasionally be schools in which such services may justifiably not be provided, these services should be considered generally necessary.

These school food services should be available to all children. Participation in the school lunch should be voluntary and not a compulsory school service, but such participation should be open to all children.

Meals should be furnished at a relatively low cost and should be free to all children who otherwise could not participate.

Each school district should have a school food service director who is a qualified educational expert in this field.

Each State department of education should have a director of school food services who is an educational expert in this field. That is, this person should have training and competence in administration and supervision; he should understand and have some experience in other educational services with which he must cooperate; and he should have some experience and training in school food services.

All curriculum materials should adequately recognize the special contributions which school food services should make to the total educational program.

National agencies should provide leadership in research, statistics, and supervision on a consultative basis, together with a minimum of administrative controls necessary to distribute such cash assistance and surplus foods as Congress may provide.

Schools should continue to make full use of surplus foods, including fluid milk, which may be available from Federal sources, but should not permit availability of such foods in large quantities to distort the nutritional value, the palatability, or the educational values of the program.

We must have expanded programs of training for school lunch personnel. For school lunch directors and supervisors, we need adequate training programs in our teacher training institutions. For school lunch workers, we need extended programs of in-service training. These should include workshops on State, regional, and district levels.

In conclusion, here are some of the trends that are becoming evident in the school lunch program.

First, there is a distinct trend for a higher percentage of our school children to come under the national school lunch program.

In fact, practically all new school buildings in the future will include school lunch facilities, both for preparing and serving meals. This seems to be true even in districts which are not now participating in any school lunch program.

Another trend is to have our State departments of education assume more leadership for all types of school food services. In line with this, there will be an increase in the amount of training required of school lunch workers.

Still another trend is the tendency of commercial interests to put pressures on school districts to contract school food services to private agencies. If the purposes of school food service are to be educational, then the school must insist upon retaining full policy and operating control of its program.

The greatest problem which now faces us is to cement a bond of fellowship between the traditionally acceptable educational services and the school food services. Teachers and school administrators need to join arms with school food service directors and workers and walk down the path of educational progress together.

WHAT HOMEMAKERS THINK OF SOME

citrus products

dates

raisins

avocados

by ESTHER S. HOCHSTIM

One of the objectives of USDA marketing research is to increase the demand for farm products. The Department's Agricultural Marketing Service goes about this in several ways. One is to undertake consumer preference studies. Here are some of the results of two of these surveys. Full reports of these studies will be released later this winter.

VIRTUALLY every household in the United States used one or more fresh citrus fruits in 1956 . . . Some 83 percent of the households used raisins; about 60 percent used dates; 25 percent used avocados.

This information together with a lot more like it on consumer uses of and attitudes toward citrus fruits, avocados, dates, and raisins was uncovered by a recent survey made by the Market Development Branch of Agricultural Marketing Service.

Some 2,500 homemakers, making up a representative sample of all households in the Nation, were interviewed.

Almost all of them reported using citrus fruits in the 12-month period preceding the survey. When the homemakers were shown a list of 14 citrus fruits, juices, and ades, 99 percent indicated they had used at least one of the products.

About 98 percent said they had used some fresh citrus, and 68 percent had used frozen concentrated juices. In both cases, orange products were used by the most homemakers. Fresh lemons and grapefruit, however, followed closely. Relatively small proportions used fresh limes.

Some 67 percent of the homemakers said they used canned juices during the preceding year, with can-

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peanuts

and

tree nuts

by MARGARET WEIDENHAMER

HOLIDAY cooking and festive Thanksgiving and Christmas menus call for nuts and lots of them. That's why winter—and particularly the holiday season—is the peak period of nut consumption in this country.

Agricultural Marketing Service researchers who surveyed over 3,000 homemakers found, however, that tree nuts were much more likely than peanuts to show this seasonal trend. Two-thirds of the homemakers who used peanuts said they used them at about the same rate all year round; one fourth of those who used tree nuts used them at a constant rate.

But no matter when nuts were used or which nuts were selected, it was usually the taste or flavor of the particular nut that determined its choice. That was the answer given most often when homemakers were asked what they liked best about the peanuts and tree nuts they used.

Frequently, nut consumption was associated with a particular "time." Often it was the holiday season, but some homemakers said they used nuts "when we have company" or "when we serve beverages."

All of the homemakers who used peanuts or tree nuts used them for snacks. Some also used them for baking, in candy, in salads, in cooking, or as toppings on other foods.

In any event, 9 out of 10 households used peanuts or tree nuts during the survey year. Salted peanuts were used by 7 out of 10, roasted peanuts by about 4 out of 10, and tree nuts by over 8 out of 10.

Tree nuts included in the survey

The author is a project director in the Market Development Branch of AMS.

ned orange juice somewhat more popular than grapefruit juice. Frozen concentrated ades had been used by 44 percent of those interviewed. Here, lemonade's 40 percent led orangeade's 22 percent.

Though the various citrus products have much in common, they also have some distinctly specialized appeals to consumers. In the case of fresh oranges and grapefruit, most of the homemakers mentioned health and taste qualities as their main reason for buying them. Flavor appears to be a particularly important factor when it comes to fresh lemons and limes. Versatility is also an important advantage to these two fruits.

Convenience came most readily to mind to homemakers who use processed fruits frequently.

Avocados are not widely used. Only 25 percent of the homemakers said they had used this fruit in the year preceding the interview, and 13 percent said they had never heard of avocados. In the West, however, 60 percent had used the product.

Most people use avocados because they like the taste. Others cite health reasons. Of the 62 percent who had heard of but had not used avocados, 43 percent indicated lack of familiarity with the fruit.

On the other hand, a great majority of households use raisins. Some 83 percent used raisins at least once during the survey year.

Homemakers gave many reasons for liking raisins, but the most important ones add up to "they're good for you," "they have iron," and "they taste good."

Out of the 83 percent who had used raisins during the preceding year, 64 percent gave health reasons, 56 percent mentioned taste or flavor.

The 17 percent of homemakers who did not use raisins gave mostly nonspecific reasons such as "we just don't like them" or "my recipes don't call for raisins."

Dates are used by far fewer homemakers and usually infrequently. About 2 in 5 said they had not used dates in the year preceding the interview. Southern homemakers reported the smallest use of dates.

To 45 percent of the homemakers who said they used dates, it was a seasonal product—mainly for holiday and winter use.

When asked why they liked using dates, 64 percent spoke of taste or flavor. Lack of familiarity and distaste for dates were the major reasons for not using this product.

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were almonds, English walnuts, black walnuts, pecans, filberts, cashews, and mixtures of these.

Generally, consumers were satisfied with the quality and freshness of both peanuts and tree nuts. They also seemed to like the size and kind of containers in which they could buy them.

English walnuts and filberts were preferred in the shell; for pecans and almonds it was almost a toss-up, with the shelled form having the edge.

"Convenience" was the reason most often given for preferring shelled tree nuts. Some householders amplified this by commenting that with shelled nuts they didn't have to clean up a "mess from the shells."

The chief explanation given for preferring tree nuts in the shell was that "they keep better in the shells." Cost was another factor mentioned by many of the homemakers; they felt inshell tree nuts were cheaper.

Those who used peanuts or tree nuts less than every two weeks were asked why they didn't use them more often. They usually mentioned personal health problems, dislike of nuts, limited use patterns, or price.

Price seemed to be an important obstacle for some homemakers. This was particularly true of tree nuts. In response to a direct question on price, almost 6 out of 10 indicated they felt that tree nuts—or some tree nuts—were too expensive. On the other hand, fewer than 2 in 10 felt that peanuts were too costly to use regularly.

In addition to peanuts and tree nuts, AMS researchers also asked questions about peanut butter and candy containing nuts.

Over three-fourths of the homemakers used peanut butter in the year preceding the survey. About two-thirds of these served it every week or two.

Peanut butter was more likely to be used in homes with children and where the homemaker was under 50. How frequently it was used was similarly related to age and the presence of children.

Almost all who used peanut butter used it as a spread. Nearly half also used it in baking and other food preparation. Peanut butter was liked because "it has a good taste or flavor," "it's good for spreads or snacks," and "it's easy to use."

Over three-fourths of the homemakers reported buying candy containing nuts. Most were satisfied with the amount of nuts used. They said almonds, peanuts, or pecans—in that order—were their favorites for candy.

THE COST OF HANDLING PRODUCE IN

It costs $27,000,000 annually to move fresh produce through New York City markets. Better handling methods and improved facilities could cut costs one-third.

Preliminary findings of a recently completed study of the New York City wholesale fresh fruit and vegetable market were announced November 23 to some 400 representatives of New York City business and financial interests, city and State government officials, and wholesale food dealers gathered at a luncheon meeting. The meeting was sponsored by the New York City Branch of the United Fresh Fruit and Vegetable Association.

Speaking were Harry G. Clowes, agricultural economist in the Handling and Facilities Research Section of the Agricultural Marketing Service, and William C. Crow, chief of the Transportation and Facilities Branch of AMS. Their reports were based on a study made during 1956 by members of the Transportation and Facilities Branch assisted by Stanford Research Institute of Menlo Park, Calif. The New York Department of Agriculture and Markets and the New York City Department of Markets also cooperated in the study.

OVER $9,000,000 a year may be saved in direct costs of handling and local transportation if the present volume of fresh produce now passing through the Lower Manhattan market facilities were moved to modern and efficient facilities at a more suitable location.

Approximately 30 percent of the savings would come from eliminating truck delay due to present inadequate facilities—narrow streets which cause traffic jams, inadequate and outmoded buildings, and so forth. Another 15 percent could be saved by eliminating waste and spoilage due to present handling facilities and equipment. The remainder of the saving would be made by eliminating cartage charges and lowering other handling costs.

But before any of these savings can be realized, the market area must be moved. As things are now, the cost involved in bringing food products to the New York consumer is high. And, these high handling costs, together with excessive waste and spoilage, are reflected in the price paid by consumers and the returns received by growers.

More than 165,500 carlots of fresh fruits and vegetables pass through the New York City market area each year. They arrive by rail, truck, boat, and air at any one of a dozen places throughout the metropolitan area.

A part of the rail receipts are unloaded on a number of team tracks in the city or across the river in New Jersey. Others are floated across the Hudson and unloaded at piers; only a few fortunate warehouses located on railroad tracks are able to unload at their very door.

Supplies coming directly by boat are handled first at waterfront piers, then go by truck to the various market districts and warehouses.

But even truck transportation isn't easy in New York City. Washington Street, the nerve center of the Lower Manhattan Market, is a deep, narrow gorge. Large over-the-road trucks, arriving directly from the producing areas, are too large to enter the street. They must stop on West Street and transfer their cargo to smaller vehicles before it can be moved the rest of the way to the wholesaler.

All this handling and rehandling at the rail yards, at the docks, and even in the streets delays the progress of the fresh produce enroute to the wholesaler. It cuts into the refrigeration process and increases handling of highly perishable commodities. And it all costs money.

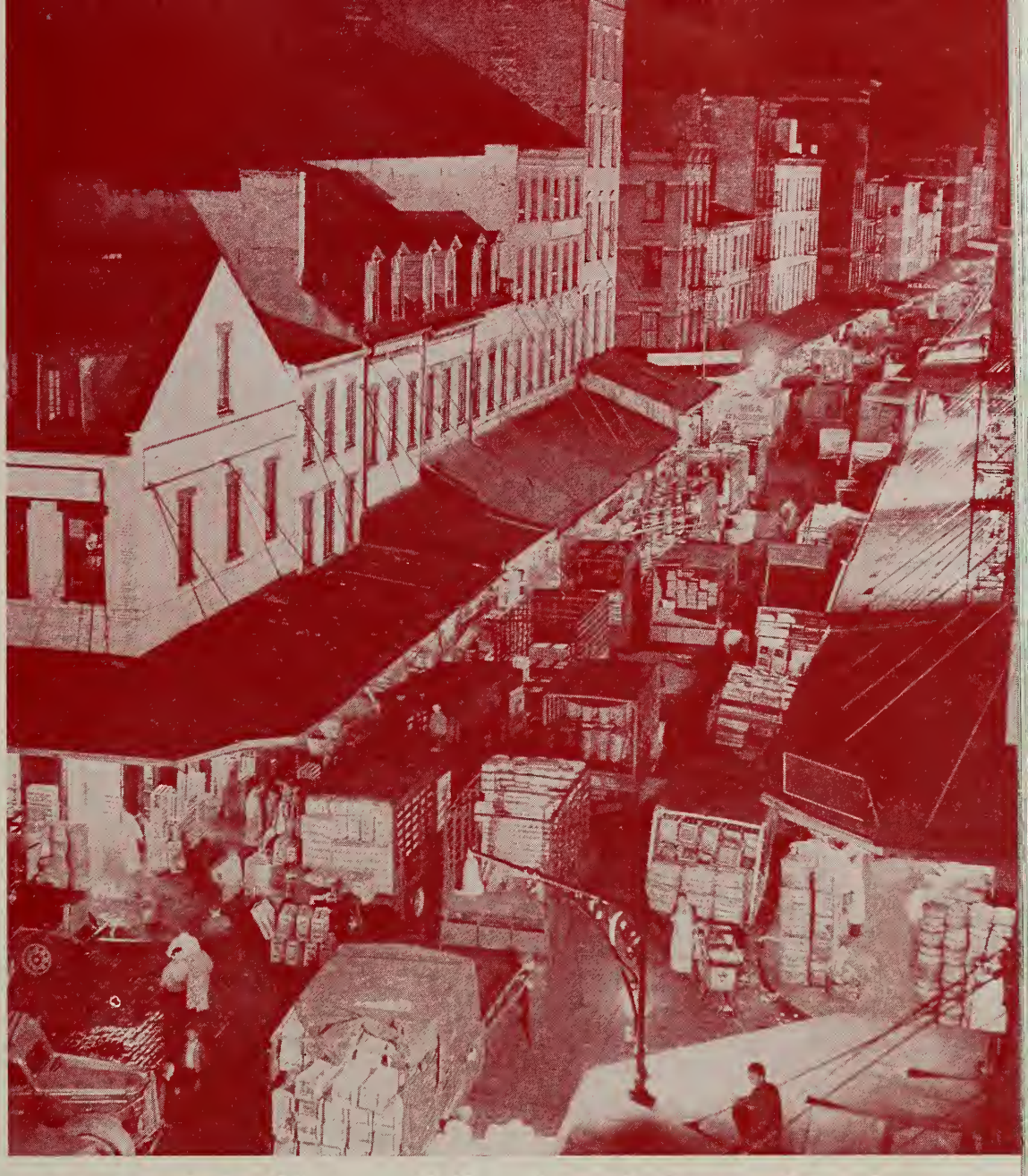
According to the Stanford study, it costs about $55 to unload a railroad car onto the piers. To move products from the railroad pier to stores on Washington Street costs another $85 per carload. From the various railroad team tracks to these stores the cartage charges are even more—from $90 to $100 per carload.

It is almost as costly to handle the produce that comes by truck into the Lower Manhattan Market. Cartage from West Street to the Washington Street merchant averages $70 per carlot equivalent. And an estimated 14,870 carlots of produce come to New York in trucks too large to enter Washington Street.

In a year these cartage charges run to about $1,000,000. Costs for moving produce from railroad docks, boats, farmers' markets, and airports

NEW YORK

by HARRY G. CLOWES



THIS IS NEW YORK'S WASHINGTON MARKET AT HEIGHT OF ITS NIGHTTIME ACTIVITY.

total $4,000,000 a year. This makes the annual cost of moving products from the places where they are first unloaded to the Washington Street stores approximately $5,000,000.

At the market there are further handling costs. These average about $12.70 per carlot for unloading and $17.70 per carlot for loading on the buyer's truck. Handling within the stores costs about $23 per carlot, while the average cost to transfer merchandise from one store to another runs about $37 per carlot.

The total cost of moving products into, within, and out of the Washington Street stores exceeds $3,000,000.

On products handled at the railroad piers which do not move to Washington Street stores, there is a service charge for protecting and checking the produce and for loading it onto trucks. This amounts to $60 per carlot. For the 23,000 carlots subject to this charge, the annual cost is about $1,380,000.

The total annual rental value of space used for handling fresh fruits and vegetables on piers and at stores in the Lower Manhattan Market is reported to be nearly $1,700,000.

Add to all these handling costs another $7,500,000 a year to move the produce from the Lower Manhattan Market to other markets or retail outlets in the area plus loading trucks for out-of-town buyers. Add, too, more than $1,300,000 in waste and spoilage due largely to poor handling and inadequate facilities.

The grand total for all these costs —the principal physical handling charges for moving 110,950 carlots of produce into, within, and to the next market beyond the Lower Manhattan Market—is estimated at about $21,500,000 a year.

For the 57,750 carlots which this market sends each year to jobbers located in other parts of the city, there are further handling costs in those jobbing establishments and costs of delivery to retail outlets. For these carlots, another $4,500,000 must be added.

Likewise, the 9,400 carlots which move from the market to chainstore warehouses undergo handling charges at these warehouses and delivery costs to retail food stores. These come to about $900,000 a year.

These items of cost cover only the physical handling of the produce. Costs of salaries to salesmen, bookkeepers, and other store operators are not included. Nor are the costs of supplies, equipment, communications, insurance, travel, and many other expenses of a marketing firm.

Even so, the total of the items listed reaches the impressive figure of $27,000,000 a year. AMS handling and facilities experts believe $9,000,000 of this could be saved.

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AMS Surveys Nursery Industry in Five States

by ROBERT A. McGREGOR

For the first time, the nation's nursery industry has definite information on marketings in five representative States.

Agricultural Marketing Service, at the request of the industry, has just made a pilot survey of the sales of eight classes of nursery products in five selected States in 1956.

Commercial nurserymen believe that from these and later statistics on sales and relative popularity of the eight classes of nursery products will come valuable information on today's marketing techniques. The data should provide a good sampling of production and marketing practices.

The report, the first of its kind to be issued by the Crop Reporting Board, covers commercial sales in California, Colorado, Florida, Illinois, and Iowa.

Sometime in January another survey will be started for five additional States—Michigan, Ohio, Oregon, New York, and Texas—and further information will be collected in the five States originally checked.

The nursery products included are conifers, broad-leaved evergreens, deciduous shade trees, deciduous shrubs, rose plants, deciduous fruit and nut trees, grape vines, and citrus and subtropical fruit trees.

Robert A. McGregor is an agricultural statistician, Fruit and Vegetable Statistics Branch, AMS.

The overall value of these products in the five States last year was $32 million. Broad-leaved evergreens accounted for the largest single share, with sales of $7.3 million. Second came rose plants with sales of $6.3 million; third, conifers, $5.6 million; then, citrus and sub-tropical fruit trees, $4.4 million; deciduous fruit and nut trees, $3.7 million; deciduous shade trees, $2.6 million; deciduous shrubs, $2 million; and grape vines, $0.3 million.

Only plants produced by the nurserymen were counted in the survey —that is, only those grown or bought and held by producers for 1 or more seasons. Plants and trees purchased and sold within a single season were not considered grown by the producer; therefore, they were not included.

Approximately 11 million broad-leaved evergreen plants were grown and sold in the five States in 1956. Sales of citrus and sub-tropical fruit trees were estimated at 3 million; conifers at 3.5 million plants; deciduous fruit and nut trees at 6.5 million; deciduous shade trees at 1.4 million; deciduous shrubs at 3.8 million plants; rose plants at 15.3 million; and grape vines at 3.7 million.

California, with 1956 sales for the eight classes estimated at almost $20 million, led the five States. Next came Illinois, $5 million; Florida, $4.5 million; Iowa, $2.5 million; and Colorado, $0.4 million.

These values represent gross returns to commercial producers for all sales at the wholesale level. Retail sales were converted to an equivalent wholesale value by using the average wholesale prices reported for each State.

Data came from about two-thirds of the commercial producers in the States surveyed. These growers accounted for over 94 percent of the total sales estimated for the eight classes in the five States.

A commercial producer was defined as one who produced and sold nursery products valued at a minimum of $1,000 in 1956. By this definition, Florida had 628 commercial producers; California, 577; Illinois, 229; Iowa, 61; and Colorado, 35.

For the five States, nursery stock available for sale in 1957 exceeded 1956 sales by 55 percent for broad-leaved evergreens; 41 percent for citrus and sub-tropical fruit trees; 39 percent for conifers; 19 percent for deciduous fruit and nut trees; 57 percent for deciduous shade trees; 66 percent for deciduous shrubs; 50 percent for grape vines; and 10 percent for rose plants.

AMS, however, warns marketing people not to consider these figures as forecasts of 1957 sales. Carryovers each year are rather substantial, and the wastage of bare root stock for some plants and trees is often high.

On the basis of 1956 sales, conifers sold the best in Colorado and Illinois; roses in California; citrus and sub-tropical fruit trees in Florida, and deciduous shrubs in Iowa.